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# SCIENCE:

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Communications will be welcomed from any quarter. Abstracts of scientific papers are solicited, and twenty copies of the issue containing such will be mailed the author on request in advance. Rejected manuscripts will be returned to the authors only when the requisite amount of postage accompanies the manuscript. Whatever is intended for insertion must be authenticated by the name and address of the writer; not necessarily for publication, but as a guaranty of good faith. We do not hold ourselves responsible for any view or opinions expressed in the communications of our correspondents.

Attention is called to the "Wants" column. All are invited to use it in soliciting information or seeking new positions. The name and address of applicants should be given in full, so that answers will go direct to them. The "Exchange" column is likewise open.

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### THE CHEROKEES IN PRE-COLUMBIAN TIMES.

#### IV.

[Continued from p. 370.]

In some cases, as at the Liberty Township Works ("Ancient Monuments," Plate XX.), a special arrangement seems to have been made for this purpose. Here we see a connected third circle, much smaller than the other two, in which is a crescent and mound; there is, however, a little exterior circle. We notice here that the square or village site is near the bluff from whence springs issue.

The square of the Seip Works ("Ancient Monuments," No. 2, Plate XXI.) and of that figured in No. 3 (same plate) are next the stream, as there were no springs in reach.

The complicated group at Newark, of course, presents features difficult to explain; but it is apparent that there were two villages, probably established at different times, but both occupied from the time the latter was built until the whole was abandoned. The octagon is near the creek, but its position was doubtless selected on account of the spring near its northern corner. The southern circle, E, was possibly a place devoted chiefly to ceremonies and games. One line of parallels seems to have been a passage-

way from one village to another. It is apparent from their courses and the topographical features of the area that none of these guarded ways were intended for race-tracks. the small, circular enclosure F, known as the "Observatory Circle," was not sufficient in extent to supply the villages with bread, is admitted: hence it was necessary to assume that there were unenclosed fields, probably on the land north of the group, between the parallels running east and west, and in the area east of the pond. It is possible that the space between the two lines of parallels, running east and west, was partially occupied by dwellings, especially that portion on the upper, level land. These suggestions are of course largely speculative; nevertheless, if there be any truth in the tradition of the Tallegwi, it is probable that here they made their first determined stand after defeat in open battle. The people of other villages, not enclosed, probably fled thither, and joined in erecting fortifications and defensive walls. Be this as it may, it is apparent that they belong to the same type as those in the Scioto and Paint Creek valleys, and may be ascribed to the people who built the latter. That they were defensive seems to be established by the considerations presented, and others which might be urged did space allow us to offer them. It is apparent to any one not biassed by a preconceived theory, who will study these works carefully, that their characteristics are essentially aboriginal: in other words, there is nothing in their form or construction contradictory to the theory of their Indian origin, except it be the single fact that a few of them approach very nearly to true geometrical figures. That it was a custom among the Indians north and south to build circular enclosures and forts, is fully attested by the historical records; it is also known that some of the Indian forts in the northern section were polygonal, especially those built by the Iroquois tribes. Numerous instances can be cited where villages were surrounded by fortifications in both these forms.

The suggestion that the circles adjoining squares were built around maize-fields is not original with the writer, as it had already been presented by Lewis H. Morgan, in his "Houses and House Life of the American Aborigines." He remarks, that "with respect to the large circular enclosures, adjacent to and communicating with the squares, it is not necessary that we should know their object. attached to the High Bank Pueblo contains twenty acres of land, and doubtless subserved some useful purpose in their plan of life. The first suggestion which presents itself is, that as a substitute for a fence it surrounded the garden of the village in which they cultivated their maize, beans, squashes, and tobacco. At the Minnitaree village a similar enclosure may now be seen by the side of the village, surrounding their cultivated land, consisting partly of hedge and partly of stakes." Whether these dirt walls were mere supports to stockades is a question not yet settled; nevertheless it is probable they were surmounted by stakes, or supported a wooden fence or screen of some kind. The fact that the ditch is here usually on the inside cuts but little figure in the discussion, as we find this to be the case in many works which are undoubtedly of a defensive character, as Fort Ancient, and the circular enclosure in Iowa shown in Plate II., "Fifth Annual Report of the Bureau of Ethnology." In fact, this was consistent with the Indian mode